CLMPTO
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1.   (Currently Amended) An apparatus for performing cadence detection on a signal, said

apparatus comprising:

-       an input for receiving an input signal potentially manifesting a certain cadence;

-       a signal processing functional block coupled to said input for receiving the input

signal, said signal processing functional block being operative to successively compute confidence

level values over time during a processing period, a currently computed confidence level value being

indicative of a likelihood of existence of a certain cadence in the input signal since a beginning of

said processing period, ~~said processing period being characterised by a variable duration~~ said signal

<u>processing functional block being further operative to terminate said processing period when the</u>

<u>currently computed confidence level and an amount of time remaining in said processing period</u>

<u>indicate that the certain cadence is unlikely to be detected before reaching the end of said processing</u>

<u>period</u>;

-       said signal processing functional block including an output for generating an output

signal indicative of the confidence level value at the end of said processing period.

2.   (Original) An apparatus a defined in claim 1, wherein said signal processing functional block

is operative to selectively terminate the processing period on the basis of the currently computed

confidence level value.

3.   (Original) An apparatus as defined in claim 1, wherein said signal processing functional block is operative to terminate said processing period when the currently computed confidence level value reaches a certain threshold.

4.   (Original) An apparatus as defined in claim 1, wherein said signal processing functional block is operative to terminate said processing period when a duration of said processing period exceeds a certain value.

5.   (Canceled).

6.   (Currently Amended) A method for performing cadence detection on a signal, said method

comprising the steps of:

-          receiving a signal potentially manifesting a certain cadence;

-          successively computing confidence level values over time during a processing period,

a currently computed confidence level value being indicative of a likelihood of existence of a certain

cadence in the input signal since a beginning of said processing period, ~~said processing period being~~

~~characterised by a variable duration~~;

-          terminating said processing period when the currently computed confidence level

value and an amount of time remaining in said processing period indicate that the certain cadence

is unlikely to be detected before reaching the end of said processing period;

-          generating an output signal indicative of the confidence level value at the end of said

processing period.

7.   (Original) A method a defined in claim 6, comprising the step of selectively terminating the

processing period on the basis of the currently computed confidence level value.

8.   (Original) A method as defined in claim 6, comprising the step of terminating said processing

period when the currently computed confidence level value reaches a certain threshold.

9.   (Original) A method as defined in claim 6, comprising the step of terminating said processing

period when a duration of said processing period exceeds a certain value.

10.   (Canceled).

11.   (Currently Amended) A method for performing cadence detection on a signal, said method comprising the steps of:

-        receiving an input signal potentially manifesting a certain cadence;

-        processing said signal to successively compute confidence level values over time during a processing period, a currently computed confidence level value being indicative of a likelihood of existence of a certain cadence in the input signal since a beginning of said processing period;

-        ~~controlling a duration of said processing period on a basis of the currently computed confidence level value~~ terminating said processing period when the currently computed confidence level value and an amount of time remaining in said processing period indicate that the certain cadence is unlikely to be detected before reaching the end of said processing period.

12.   (Original) A method as defined in claim 11, comprising the step of terminating the processing period when the currently computed confidence level value reaches a predetermined threshold.

13.   (Currently Amended) A method as defined in claim 11, ~~wherein the duration of~~ comprising the step of terminating said processing period when a duration of said processing period ~~does not exceed~~ exceeds a certain value.

14.　　(Currently Amended) An apparatus performing cadence detection on a signal, said apparatus

comprising:

- 　　　　an input for receiving an input signal potentially manifesting a certain cadence;

- 　　　　a signal processing functional block for processing said signal to successively

compute confidence level values over time during a processing period, a currently computed

confidence level value being indicative of a likelihood of existence of a certain cadence in the input

signal since a beginning of said processing period;

- 　　　　a duration control unit for controlling the duration of said processing period on a basis

of the currently computed confidence level value, said duration control unit being operative to

terminate said processing period when the currently computed confidence level and an amount of

time remaining in said processing period indicate that the certain cadence is unlikely to be detected

before reaching the end of said processing period.

15.　　(Original) An apparatus as defined in claim 14, wherein said duration control unit is operative

to terminate the processing period when the currently computed confidence level value reaches a

predetermined threshold.

16.　　(Original) An apparatus as defined in claim 14, wherein the duration of said processing does

not exceed a certain value.

17.   (Currently Amended) A tone detection apparatus suitable for detection of call progress tones,

a call progress tone being characterised by at least one frequency component and a timing behaviour

defining a certain cadence, said apparatus comprising:

-       an input for receiving an input signal potentially containing a call progress tone, the

signal being capable of being divided in a plurality of consecutive sections;

-       a spectral processing unit for processing said signal to generate a plurality of sets of

data elements, the sets of data elements providing spectral information about respective sections of

the input signal;

-       a frequency component processing unit coupled to said spectral processing unit for

receiving sets of data elements and for processing the sets of data elements to output sets of

classification data elements indicating whether a frequency component of a certain call progress tone

exists in respective sections of the input signal;

-       a cadence processing unit coupled to said frequency component processing unit for

receiving and processing sets of classification data elements to compute over time successive

confidence level values for the input signal during a processing period encompassing the sections

of the input signal that correspond to the sets of classification data elements processed by the

cadence processing unit, a currently computed confidence level value being indicative of a likelihood

of existence of a certain cadence in the input signal since a beginning of said processing period, ~~said~~

~~processing period being characterised by a variable duration~~ said cadence processing unit being

operative to terminate said processing period when the currently computed confidence level and an

amount of time remaining in said processing period indicate that the certain cadence is unlikely to

be detected before reaching the end of said processing period;

-       said cadence processing unit including an output for generating a signal indicative

of the confidence level value at the end of said processing period.

18.   (Original) An apparatus a defined in claim 17, wherein said cadence processing unit is

operative to selectively terminate the processing period on the basis of the currently computed

confidence level value.

19.   (Original) An apparatus as defined in claim 17, wherein said cadence processing unit is

operative to terminate said processing period when the currently computed confidence level value

reaches a certain threshold.

20.   (Original) An apparatus as defined in claim 17, wherein said cadence processing unit is

operative to terminate said processing period when a duration of said processing period exceeds a

certain value.

21.   (Canceled).

22.   (Currently Amended) A method for performing tone detection suitable for the detection of

call progress tones, a call progress tone being characterised by at least one frequency component and

a timing behaviour defining a certain cadence, said method comprising the steps of:

-        receiving an input signal potentially containing a call progress tone, the signal being

capable of being divided in a plurality of consecutive sections;

-        processing said signal to generate a plurality of sets of data elements, the sets of data

elements providing spectral information about respective sections of the input signal;

-        processing the sets of data elements to output sets of classification data elements

indicating whether a frequency component of a certain call progress tone exists in respective sections

of the input signal;

-        processing said sets of classification data elements to compute over time successive

confidence level values for the input signal during a processing period encompassing the sections

of the input signal that correspond to the sets of classification data elements processed by the

cadence processing unit, a currently computed confidence level value being indicative of a likelihood

of existence of a certain cadence in the input signal since a beginning of said processing period, said

processing period being characterised by a variable duration;

-        terminating said processing period when the currently computed confidence level and

an amount of time remaining in said processing period indicate that the certain cadence is unlikely

to be detected before reaching the end of said processing period

-        generating a signal indicative of the confidence level value at the end of said

processing period.

23.   (Original) A method a defined in claim 22, further comprising the step of selectively

terminating the processing period on the basis of the currently computed confidence level value.

24.   (Original) A method as defined in claim 22, wherein said terminating step terminates said

processing period when the currently computed confidence level value reaches a certain threshold.

25.   (Original) A method as defined in claim 22, wherein said terminating step terminates said

processing period when a duration of said processing period exceeds a certain value.

26.   (Canceled).

27.   (Original) A tone detection system for use in a telecommunication network comprising the

apparatus defined in claim 1.

28. - 33. (Canceled)

34.   (New) An apparatus as defined in claim 29, wherein said first spectral characteristic values and said second spectral characteristic values are Discrete Fourier Transforms.

35.   (New) A method as defined in claim 32, wherein said first spectral characteristic values and said second spectral characteristic values are Discrete Fourier Transforms.